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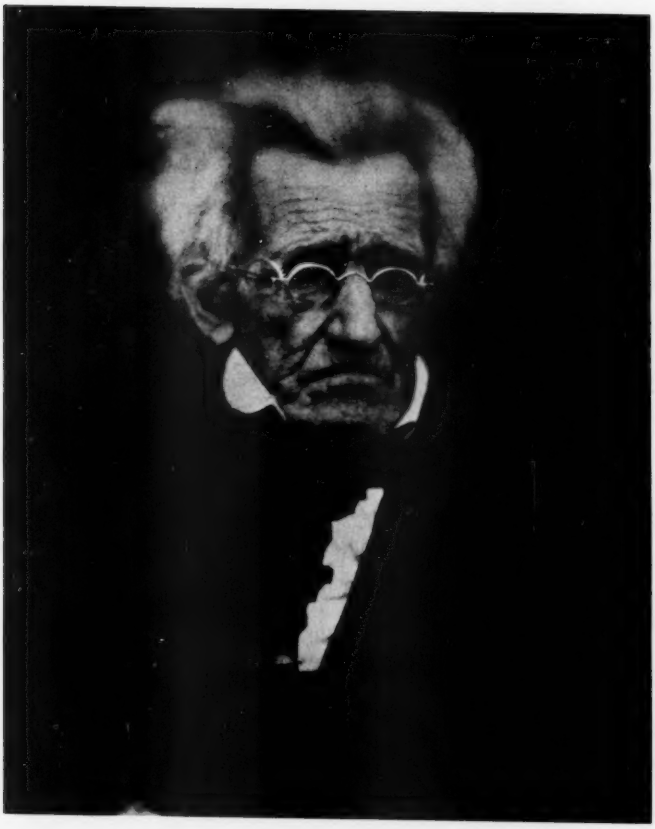

ANDREW JACKSON, AN UNPUBLISHED DAGUERREOTYPE

JOURNAL OF PHOTOGRAPHY AND MOTION PICTURES
OF THE GEORGE EASTMAN HOUSE

VOLUME 5 NUMBER 6 JUNE, 1956

IMAGE

VOL. 5, NO. 6
JUNE, 1956

JOURNAL OF PHOTOGRAPHY AND MOTION PICTURES
OF THE GEORGE EASTMAN HOUSE

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IMAGE is published monthly except for July and August for the George Eastman House Associates by George Eastman House, Inc., 900 East Ave., Rochester 7, N. Y.

MEMBERSHIP FEE in the George Eastman House Associates including ten issues of Image: U.S., Canada, Mexico, South and Central America and U.S. Possessions, $5.00 per year. Single copies to non-members are $1.00 each. Memberships by persons overseas may be purchased with UNESCO coupons at $5.00.

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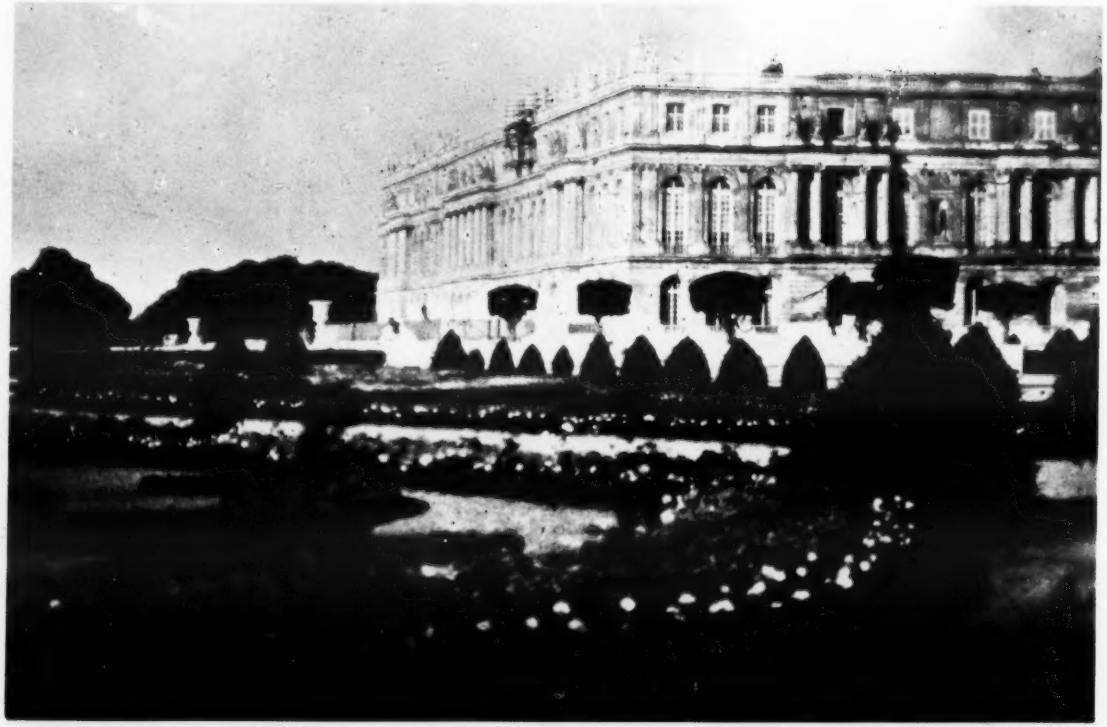


VIEW OF VERSAILLES, taken by Gabriel Lippmann in 1900, by a color process of his own invention. The unique original, a glass plate 1¾ x 2⅝ inches, was presented by the inventor to Josef Maria Eder, the great Viennese photographic historian. It is now in the George Eastman House Collection.

Lippmann's process, now obsolete, is the most elegant of all color photographic techniques, because it does not involve the use of any dyes or coloring matter. The colors are produced by the interference of light waves, just as an oil slick shows, under certain conditions, rainbow hues. By means of a special plate-holder, the emulsion side of a glass plate is placed in contact with a pool of mercury. Exposure, through the back of the glass plate, varies from one to two minutes for a landscape in bright sunlight with an f/4.5 lens. After development the plate is cemented to a glass prism. When examined by raking light, the original colors appear vividly in all their original brilliance.

So far as is known, this is the first time that a color reproduction of a Lippmann plate has ever been published.

THE DOOM OF OLD FILMS

An important mission of the George Eastman House is to collect, preserve and study the outstanding historic and artistic motion pictures of the past. Some three thousand such films are deposited in its modern vaults and preserved for use by scholars and film historians. But this is a small number compared to those on nitrate films in other hands and stored in thousands of indifferent locations. Many of these latter are silent films, representing the highest in motion picture art and history; still they are doomed to destruction. Why? Because chemical deterioration invariably attacks the nitrate film on which these motion pictures were made. Such disintegration sets in quickly sometimes, but certainly before the film has aged a half a century. Hence all the silent films that still exist are automatically subject to the penalty of extinction. This is a doom that has already overtaken innumerable of these historic film documents.

EDITORIAL

The only reprieve to this execution of time is to duplicate each nitrate film on lasting acetate film base. But this is expensive and few authorities are eager to provide the funds. The George Eastman House has spent in its short existence more than one hundred thousand dollars, received from private sources, for such rescue purposes. Mary Pickford has recently contributed generously to enable permanent duplicates to be made on acetate of her own collection of nitrate based films which she gave to the Library of Congress.

We hope sincerely that there will be more such contributions from interested persons, the film industry itself and others, to save this American heritage of historic and artistic value so that the world of today and tomorrow may learn from the past. The rescue cannot wait: it must come now or future scholars will have lost the story of how a whole generation received its impressions of social behavior, moral justice and poetic expression from motion pictures even more than from painting, the theatre or literature. The film was the dominant cultural force, and serious students will find close to the surface of the old movies eloquent clues to the special hopes and dreams of the people for whom they were made. For the image of that life and those times was seized and sealed through the medium of the motion pictures – to be revived and reproduced for the appraisal of tomorrow in all the reality of the actual event. Can these silent films be saved before their sentence of execution runs out? Only if funds are somehow made available promptly.

Oscar N. Solbert

DEGAS: Amateur Photographer

Eight Unpublished Letters by the famous painter, written on a photographic vacation.

Translated by Beaumont Newhall

EMILE VERHAREN (1855-1916), Belgian poet. Photograph by Edgar Degas. George Eastman House Collection.

IT HAS LONG BEEN KNOWN that Hilaire Germain Edgar Degas, the famous French painter, was interested in photography. But the extent of his interest becomes clearer in eight hitherto unpublished letters, recently acquired by the George Eastman House. Written to his friend Tasset—an obscure painter who owned a photographic supply house and finishing service in Paris—they show us Degas as an avid amateur photographer, who not only exposed plates by the dozen, but developed them himself and ordered enlargements from the negatives so big that they had to be sent to him rolled around a stick.

Degas was vacationing at Mont-Dore, in the mountains of the Department of Puy-de-Dôme, when he wrote the letters. He did not date them, beyond writing down the day of the week, but fortunately each one is postmarked, so that we know they were mailed between August 12 and 22, 1895. In these ten days Degas ordered six enlargements, dozens of plates, and a new camera. His first plate order was for six boxes of the standard "Blue Label" brand, manufactured by Lumière. He then asked Tasset to send him "several dozen" Lumière *panchromatic* plates. These were a novelty: Auguste and Louis Lumière had lectured on them in June at the French Society of Photography. They proposed the word "panchromatism" (as opposed to the then current "orthochromatism") to describe photographic material sensitive to all colors.* (Their advertisements, however, offered only "plaques orthochromatiques" throughout 1895.)

*Auguste and Louis Lumière, "Sur l'orthochromatisme," *Bulletin de la Société Française de photographie*, 2e série, XI (June 15, 1895), 308-12.

In one of his letters Degas expresses his concern with the correct rendering of the tonal scale, and it was this problem which undoubtedly led him to experiment with the new material. Because his camera was not a standard size, Tasset had to cut the plates down to 8 x 10 centimeters. In so doing he fogged them; evidently he was not familiar with the high red sensitivity of panchromatic material. To obviate this difficulty in the future, Degas ordered a 9 x 12 centimeter camera.

Paul Valery, in his book *Pièces sur l'art* (Paris, 1938), said that "Degas loved and appreciated photography in a period when artists disdained it or did not dare to admit that they made use of it. He made excellent ones: I jealously preserve a certain enlargement which he gave me. Near a big mirror, can be seen Mallarmé leaning against the wall, Renoir on a sofa. In the mirror, ghostlike, are seen Degas and his camera, Madame and Madamoiselle Mallarmé. Nine gasoline lamps, and a terrifying quarter-hour of utter immobility, were the conditions for this sort of masterpiece."

Of all the French painters of the period, Degas seems to have been most aware of what photography had to teach the painter. He was intensely preoccupied in capturing fleeting images, in organizing compositions out of the apparently accidental juxtaposition of moving forms, and in choosing viewpoints which gave violent perspective, often looking upwards or downwards. Again and again his canvases remind us of the camera image.

Strangely, photographs known to have been taken by Degas are few—perhaps because his work with the camera was so overshadowed by the paintings, sculptures and drawings on which his fame is based.

SUNDAY [AUG. 11, 1895]

Dear Monsieur Tasset

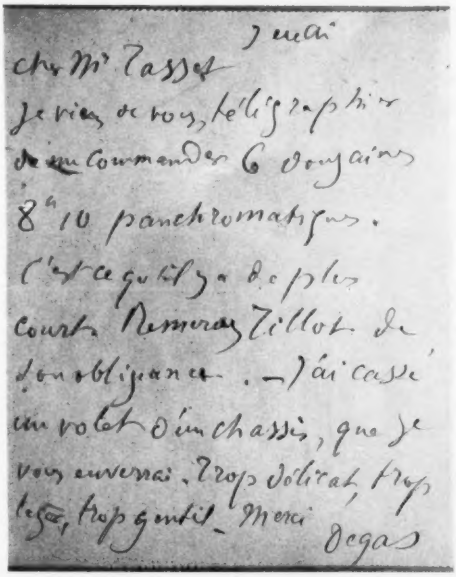
I have indeed received the papers. I am sending you several negatives which I want to see you treat.

One, a snapshot, an old houseman of Carpentras', seated in his garden, must not have been developed enough (I can't see with the round red lamp bought at Avignon). All is there, but very weak. Would it be possible to intensify it, and intensify very lightly, to keep the somewhat grey appearance? If that can be done, make a print of it and send it to me. You will make an enlargement, not too big, if I find the print sharp.

2nd. An elderly invalid, in black skull cap; behind his armchair a friend standing. The negative is not bad, and an ordinary enlargement will do me all right.

3rd. The same alone. There is a stain above the head. If you can block out the stain perfectly, enlarge the negative as it is. If that can not be done very well, cut at the height of the two frames and the stain.

4th. Same subject. Slight opaquing [? "petits reccords" (sic)]. Of course cut one centimeter



Reproductions of one of the Degas letters to M. Tasset.

from the right of the negative. Opaquing only on the bottom, and on the side to the left of the negative.

I also ask your daughter to make two prints of Nos. 2, 3, 4, one mat, the other glossy (on varnished cloth), mount them and send them to me (to have forwarded to Carpentras).

Thanks, and goodbye for now

Degas

MONT-DORE—HÔTEL DE LA POSTE
The 3 enlargement, send them to me rolled, not mounted.

MONDAY [AUG. 12, 1895]
HÔTEL DE LA POSTE
MONT-DORE

Dear M. Tasset,
Have the goodness to send me 6 boxes of 8 x 10 [centimeter] Lumière Blue Label plates. I hope that with the box they won't exceed the weight for parcel post. I have already spoiled quite a lot of negatives.
The enlargements you will send me rolled around a stick.
Thanks –

Degas

Portrait of Edgar Degas by his sculptor friend Paul Albert Bartholome.

TUESDAY [AUG. 13, 1895]
Dear M. Tasset, Would it be possible to have cut *right away* to 8 x 10 [cm.] several dozen Lumière panchromatic plates? I see the need for them here. As I shall be here for another fortnight, perhaps you can have made for me a 9 x 12 [cm.] camera. Work out the quickest way. I am waiting for the prints and enlargements with impatience.– Good-day –

Degas

THURSDAY [AUG. 15, 1895]
Dear M. Tasset,
I have just telegraphed you to order me 6 dozen 8 x 10 [cm.] panchromatics. That is what there is the greatness shortness of. Thank Tillot for his kindness. I broke the slide of a plate holder, which I am sending you. Too delicate, too pretty. Thank you.

Degas

FRIDAY [AUG. 16, 1895]
Dear M. Tasset, Everything has arrived. I have found tonal scale which you spoke about of certain value. Is it impossible to make from the grey garden a positive, then a negative that can be intensified? Or else make from the first negative an enlargement that can be forced in development or, better, in exposure? Thanks!

Degas

SATURDAY [AUG. 17, 1895]
Dear M. Tasset, Prints excellent. Thank your daughter. I think that there is no way to better the garden. What I suggested yesterday seems to me absurd. I am trying to photograph almost the night. Have you any tips on this? Greetings

Degas

SUNDAY [AUG. 18, 1895]
But nothing comes out, dear M. Tasset, on those cursed panchromatics. In cutting them perhaps you fogged them. Order the 9 x 12 [cm.] outfit like the one I sent back from your man and hasten him. These cut-down plates do not give me any confidence. At the end of an instant in the [developing] bath, everything becomes black and nothing.

Degas

THURSDAY [AUG. 22, 1895]
Dear Monsieur Tasset, Monday night I'll be back in Paris. So don't send me anything here. See you soon.

Degas

Acutance: or How Sharp Is a Photograph?

by Fred H. Perrin

A new term, "acutance" now regularly appears in photographic literature and recently in photographic advertising, and because few know that acutance has to do with how the human eye sees sharpness in photographs, we have asked Dr. Perrin to explain the origin and meaning of the term. Dr. Perrin is a research associate in the Kodak Research Laboratories and for almost twenty years has been associated with the group that has been studying sharpness and related subjects.

WHEN WE LOOK AT A PHOTOGRAPH, one of the features which consciously or unconsciously enters into our appraisal of its quality is its "sharpness." If we choose, we can arrange a group of photographs in their order of sharpness by merely looking at them and shifting them about. But when we try to give a numerical value to sharpness—as the scientist must—the problem is greatly complicated. It is the scientist's problem to give numerical values to indicate how people perceive sharpness. Such is the subject of this paper.

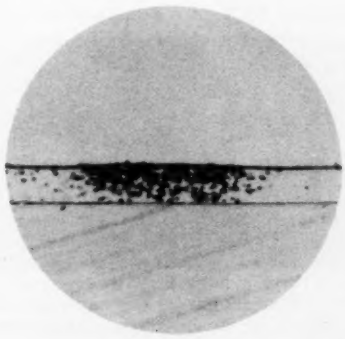
Numerical values for sharpness in photographic images must be based on the nature of developed images. Now it has been possible to measure the physical characteristics of images for many years, but until recently no characteristic that represented sharpness as seen by the eye had been found. Why it became so important to measure this characteristic and how the characteristic was found and named "acutance" involves the entire history of photography itself.

Said J. R. Sedgwick[1] a hundred years ago:

> "Nor must it be overlooked, that mere artistic effect is often a very secondary consideration in a photograph. There is another, and sometimes much more important requisite, namely, the perfect clearness and legibility of every detail, whether in light or shadow; . . . "

We would now say that the "definition" must be adequate. But this is an indefinite term that comprehends the general effect arising from a combination of specific properties. We usually demand that detail be visible in the shadows, but if it is obvious that the scene is strongly lighted, we also demand a high contrast between the deepest shadow and the highest light. The methods by which tonal values—light and shade—are properly reproduced would themselves make another story, and here we shall merely assume that the reproduction of tonal values is satisfactory.

Another requirement is that the texture of the image be smooth. The image is made up of silver grains or dye particles, as shown by the cross section of a developed image in Figure 1,

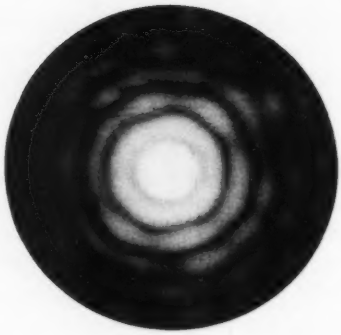


1. Cross section of typical developed negative image. The emulsion was about 0.0006 inch thick.

and this granular structure becomes distressingly evident when the negative is enlarged beyond a certain point in making the print. The resulting sensation experienced by an observer is known as *graininess*. This granular structure is usually the factor that sets the limit to which a photograph can be enlarged satisfactorily. Moreover, it sets a lower limit to the size of the details that can be reproduced, although it most emphatically is not the only factor that determines this limit. Furthermore, the grainier picture of two may be the sharper. In this article, we shall not discuss graininess further, although we must never forget that it can become an important factor in appraising definition.

Under the usual conditions that tonal values are satisfactorily reproduced and that graininess is not obnoxious, a property that has long been used as a tacit criterion of definition is *resolving power*, which has a history that even antedates photography. Two hundred years before Daguerre left his famous silver plate in his mercury-contaminated cupboard, spectacle lenses were adapted to make crude telescopes and microscopes. When methods of correcting lenses to make sharp images were developed, microscopists discovered that by increasing the diameter of their objectives so as to gather a larger cone of light from the object, they could distinguish finer and finer details. Likewise astronomers, who at that time were chiefly concerned with the positions of stars and the characteristics of double stars, found that in even the best telescopes, the image of a star was a small disk and that by increasing the diameter of their objectives, they could reduce the size of this disk.*

Sir George Airy, then Astronomer Royal of England, in 1834 gave a mathematical formulation for the size of this disk as formed by a perfect lens and showed that it is surrounded by faint rings of diminishing brightness. Figure 2 is a greatly enlarged picture of the Airy pattern made by Mr. R. L. Lamberts of the Kodak Research Laboratories. Since about 84 percent of the light energy is in the central disk, the rings are rarely noticeable, but this picture was developed to a very low contrast to reduce the disparity between the central disk and the outer rings. Two neighboring stars will be imaged as two disks, and these disks may overlap. The smaller the disks, speaking generally, the greater is the likelihood that they will not overlap to such an extent as to be indistinguishable separately.



2. Greatly enlarged image of a point source of light made by a good lens, showing the Airy diffraction pattern.

Now enter the spectroscopists. About a hundred years ago, it was found that every chemical element betrays its presence by characteristic lines in its spectrum regardless of the presence of other elements, and it became important to know how small a difference of wavelength was represented by the closest lines that could be distinguished individually. This gave rise to several important papers by the third Baron Rayleigh, who in 1874 wrote a paper[2] in which he introduced, apparently for the first time, the term "resolving power" to represent this property, and described the requirements for a high resolving power. Since then, resolving power has often been used explicitly, and still more often implicitly, as a criterion of the quality of optical instruments, and it has been studied assiduously.

Spectra had been photographed ever since the days of the daguerreotype. Astronomy had to wait until 1855, when the faster wet-collodion

*This last statement may strike the practical photographer as being contradictory to his experience. The explanation is that photographic objectives are commonly required to have a high aperture and to cover a large field, so compromises are made in their design and they are made as large in diameter as the outstanding aberrations will permit. As a result, they perform best at an intermediate aperture, falling off at higher apertures because of aberrations and at lower apertures because of diffraction.

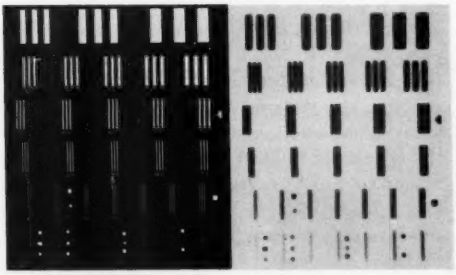
process became available. But both technologies had in common the requirement of high resolving power, so it is not surprising that it was an astronomer-spectroscopist, F. L. O. Wadsworth, who in 1896 wrote what appears to be the first paper on the resolving power of the photographic plate.[3]

Countless studies on the resolving power and the spreading of the image in photographic emulsions have been made since then, and now most investigators have settled upon a technique that varies only in details from one laboratory to another. It consists in first photographing patterns of lines that are of graded width and separation. A typical test object is shown at the left in Figure 3. The reduction of the camera for which this test object was designed is such that the numbers represent the fineness of each pattern in lines per millimeter. When this is photographed on a certain emulsion and the developed image is examined with a microscope, it has the appearance shown at the right. The finest pattern in which the three lines are distinguishable separately or, in technical terms, *resolved,* depends upon the conditions of viewing, and of course a finer pattern is distinguishable in the original negative than in this halftone reproduction. There is no question but that the resolving power, even in the halftone, is well over 100 lines per millimeter. The negative was made on a film having a fine grain, which is conducive to high resolution. Even the fast materials that have larger grains and are used for snapshots have resolving powers that are not much below 100.

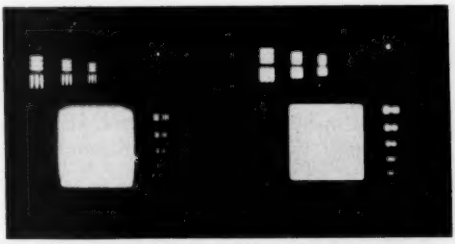
With resolving power so important in the scientific applications of photography and the literature on the subject so voluminous, there developed a strong tendency to take resolving power as the index of the ability of negative materials to reproduce details satisfactorily in pictures of all kinds. Although resolving power is difficult to measure accurately, because the test object must be photographed with meticulous care and observers differ somewhat in their judgment as to whether the lines in the image are separated, it has the merit of apparent simplicity, and paper after paper has appeared in the past half-century on the resolving power of photographic materials.

This preoccupation with resolving power was in a measure justified because materials having a high resolving power generally give "better" pictures than those having a low resolving power. But this is not always the case, and within recent years, it became evident that something was wrong with this criterion when applied generally.

The difficulty can be seen from Figure 4, which consists of enlargements from two very small negatives of a test object that were made in the course of a laboratory investigation. The square at the left has quite sharp edges but even the coarsest lines in the resolving-power patterns are hardly resolved. On the other hand, the edges of the square at the right are very blurred although resolution extends to rather fine patterns. Which is the "better" picture? Photographs of an actual scene made under the conditions of these two tests were judged to be



3. Typical test object for measuring resolving power (left) and photomicrograph of image on a certain fine-grained negative material (right) enlarged to the same scale. The numbers in the reproduction of the test object represent the number of lines per millimeter and are not present in the test object itself.



4. Enlargements of small images of a test object used in research. The image at the left was made under conditions of high acutance and low resolving power while the image at the right was made on the same film under the reverse conditions.

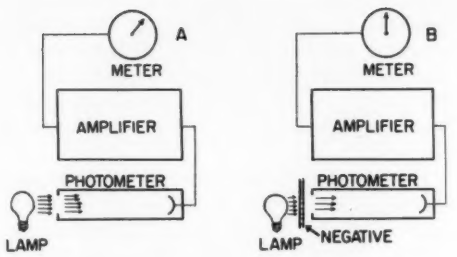
equal in quality by a group of observers. True, large objects were more sharply rendered in one picture and small details, lost in this picture, were distinguishable under close inspection in the other, but the faults and virtues were considered to be about evenly matched. It would appear that sharpness may be as important as resolving power.

And it is usually more so. Even the fastest and most grainy film has a resolving power of hardly less than 80 lines per millimeter. At an enlargement of eight times, for which the graininess of such a film is objectionable, the corresponding value is 10. Now the resolving power of the human eye at the ordinary reading distance is also about 10, and experience shows that we are satisfied when the resolving power in the print is of this order.*

That being the case, what matters it whether the resolving power of the film is 100, 150, or even 1000 lines per millimeter? It is true that a fine-grained negative may be enlarged more than a coarse-grained one, so it is desirable that the resolving power of films should increase as the graininess diminishes. This actually takes place, and although the two effects do not vary in proportion, it must be remembered that large prints are viewed from comparatively great distances, in which case, the resolving power needed to satisfy the eye diminishes. Sharpness also varies inversely with the degree of enlargement, but differences in sharpness, unlike differences in resolving power, are frequently well above the threshold of the eye.

What do we mean by "sharpness"? Broadly, it refers to our impression of the abruptness with which the brightness of the photograph changes at the edge of objects within it. To understand how the photographic technologist measures this change, a mathematical digression is necessary.

In diagram A of Figure 5, a beam of light enters the opening of an instrument, known as a photometer, that measures the amount of light



5. Sketch illustrating the action of a densitometer. A lamp sends light into a photometer containing a light-sensitive cell. The electrical output of the cell is amplified and measured by a meter. At A the meter indication is high because the light is unobstructed while at B it is low because part of the light is absorbed by the negative under test.

passing through the opening. Let us say that an amount of light I_0 passes through the opening. If a photographic negative is placed against this opening, as in diagram B, a lesser amount I enters. The *transmittance* of the negative where it covers the photometer opening is then defined as

$$T = I/I_0.$$

The entire negative can be considered as a surface of which each point is characterized by a certain value of transmittance T. When this negative is printed, these values of transmittance are translated into values of reflectance R at the corresponding places in the print.

When an observer looks at a photograph, his sensation of light and shade is proportional, not to the transmittance T (in the case of a negative) or to the reflectance R (in the case of a print). Instead, the observer's sensation is more nearly proportional to what the mathematician calls the common logarithm of T or R. The significance of this statement is simple. If a person is in an illuminated room, a sudden doubling of the amount of light in the room will give rise to a sensation of increased brightness. Should the original illumination be low, such a doubling requires only a small additional amount of light. On the other hand, a sudden addition of this amount of light may not be even perceptible if the room is brightly illuminated to start with; to produce the same sensation of increased brightness as in the first instance, the amount of light originally present must be doubled, and this requires much more light than was required in

*Actually an improvement is perceptible until the resolving power attains about twice this value, but the commonness of camera motion, lens aberrations, and the diffusion of light in the printing process has caused us to be tolerant of something short of our ideal. Regardless of the exact quantitative relations, the qualitative nature of the argument is still valid.

the first instance. The properties of logarithms are such that the difference between the logarithms of the original and the increased amounts of light required to produce the same sensation of increased brightness are in both cases the same. We therefore define a term *density* by the expression

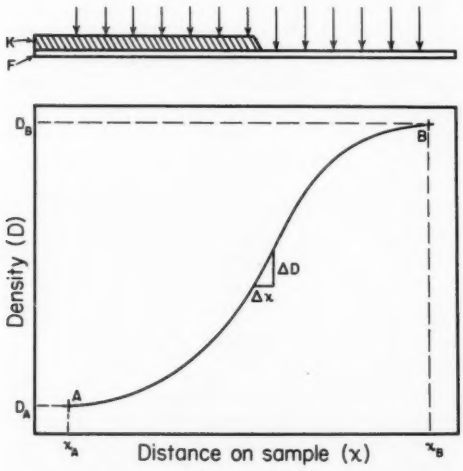
$$D = \log 1/T$$

for the negative and

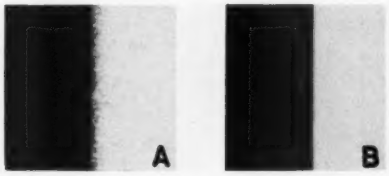
$$D = \log 1/R$$

for the print. The photometers commonly used in photography are calibrated to read directly in density and are known as *densitometers.*

Now back to the photographic film, and to see why an image can never be perfectly sharp, consider Figure 6. Here light falls from above on a film *F* one side of which is shielded by an opaque plate *K* having a perfectly sharp knife edge. Despite this shielding, the silver halide grains in the film diffuse light into the shaded area under the plate *K* so that, when the film is developed, the silver image is not perfectly sharp and extends slightly into the area that was covered by the plate. This is shown by Figure 7, where A is such an image on motion-picture positive film and B is a similar image on an almost grainless film of extremely high contrast used in scientific research, both magnified about 200×.



6. Sketch showing the method of exposing a film *F* under a knife edge *K* to determine sharpness. The microdensitometer trace or edge-density curve of the developed image is shown on an enlarged scale by the graph.



7. Knife-edge images on (A) cine positive film and (B) a modified Lippmann film, magnified 200×.

As might be imagined, it is very difficult to measure the change in the density from the dense to the light portions of images like these, where the density changes so rapidly, but instruments have been developed for doing this. They draw curves like the one in Figure 6, in which the scale of distance may be extended as much as a thousand times the corresponding distance on the film. The height of such an edge-density curve at any point is proportional to the density *D* at the corresponding point of the film.

It seems reasonable that, the steeper this curve representing the variation of density across the edge, the sharper the edge of the image should appear to be, but the difficulty of evaluating such a curve is that the steepness starts at zero at the bottom, attains a maximum, and eventually becomes zero again. What feature of this curve, then, determines how sharp an observer will consider the edge to be?

It is desirable to refer to a sensation by a term that is distinct from the term used to designate the stimulus that gives rise to the sensation. Now the term *sharpness* has come into common use to designate the visual sensation aroused by looking at an abrupt discontinuity in brightness, such as is represented by the photographic edge just described. To prevent confusion, another term should be applied to whatever physical measurement of such a discontinuity may be found to correspond to the sensation of sharpness. The word should be new to avoid encrusted connotations, and it should be from a dead language to avoid nationalistic overtones. What more natural than to make use of the Latin root *acut-*, meaning "sharp"; and some ten years ago, the writer suggested to his colleagues that the physical correlate of sharpness, when found, should be termed *acutance.* With a name selected, all was ready for the christening, but where was the baby?

One of the things for which the late Dr. L. A. Jones,[4] of the Kodak Research Laboratories, will

ever be remembered is his insistence that no measurement which is made on a photograph has any meaning unless it indicates *how the picture looks* with respect to the characteristic under consideration. Acting on this principle, Dr. R. N. Wolfe and Mr. F. C. Eisen made a series of about a dozen prints from as many different types of negative material that varied in their edge-density curves. Some thirty observers then looked at these prints independently and arranged them in order of sharpness according to their judgment. Naturally, the observers did not agree unanimously, but advantage was taken of this circumstance because statistical methods could then be used not only to compute the average arrangement, but also to estimate the size of the sharpness differences between the various prints. For example, if 29 of the 30 observers considered that print B was sharper than A while only 17 out of the 30 considered that C was sharper than B, it is reasonable to conclude that the difference in sharpness between A and B is much greater than the difference between B and C.

Then Wolfe and Eisen made all sorts of measurements on the edge-density curves. They measured the maximum slope; they measured the average slope between certain points, but on no basis would the numerical evaluations of the pictures correspond to the judgments given by that court of last resort, the observers themselves. If the observers judged pictures A, B, and C to increase in sharpness in about equal steps, for example, one method of evaluation might give pictures A and B the same value, and C a widely different value, while another method might even give picture B a higher value than picture C. Apparently the action of the eye is more complicated than we thought.

One of the earliest studies that Dr. Jones ever made concerned the way that photographic papers reproduce tones of light and shade, and he found that a rather complicated procedure was needed to give them numerical rankings in accordance with the way the eye sees them. Shortly before his death, he and Dr. G. C. Higgins made a study of the behavior of the eye in connection with measuring photographic granularity, and with this background, they attacked the problem of sharpness. Their reasoning, which is given in their original paper,[5] cannot be even outlined in the limits of this brief article, but the method they devised for measuring acutance can be described.

Let the horizontal axis in Figure 6, which represents the distance x across the edge, be divided into extremely short intervals. The mathematician's symbol for an extremely short interval is the Greek letter Δ (delta), so each such interval has a length Δx. Within each interval, the curve rises by an extremely small increment ΔD, as sketched, and therefore the slope of the curve within that interval is the quotient of ΔD divided by Δx, or $\Delta D/\Delta x$. Since density D is the ratio of two quantities, it has no dimensions, but x represents a distance. Such small distances are commonly measured in microns (μ), one micron being one-thousandth of a millimeter or about 0.00004 inch. (For ordinary fast films, the curve of Figure 6 would extend over about 50 μ.)

First the curve is divided into short intervals Δx as described and the slope $\Delta D/\Delta x$ of each interval is determined. This varies from zero to a maximum and then to zero again, but only the region between two certain points, A and B, is considered. Experiment has shown that these limiting points are determined by the condition that the slope there should be 0.005. Each of the slope values between A and B is squared and the squares are added together. The average of this sum is found by dividing the sum by the number of intervals between A and B. The result is expressed mathematically by the symbol $\langle G_x^2 \rangle_{AV}$

A certain edge in Wolfe and Eisen's scene was selected and the value of this quantity for that edge in each of their pictures was computed. Then the pictures arranged themselves in the same order and with the same spacing as when ranked according to the sharpness observations. This quantity, $\langle G_x^2 \rangle_{AV}$, by definition, is thus a quantitative measure of acutance. Many tests since that time have invariably shown that, the higher the acutance value, the sharper the picture appears. This has been found to hold true even for motion pictures and color photographs.

When the images being compared have different values of density difference $D_B - D_A$, this measure of acutance must surely be modified, but the subject has not been studied enough to show how. In practice, this difficulty is sidestepped by either giving the values at a density difference of unity or by comparing the values for a constant density difference.

Finally, should we measure acutance on the negative material or on the print itself? Ideally, of course, on the print, but the manufacturer of photographic films has no control over how his films will be used and therefore he must evaluate the films themselves. Whether values of acutance will ever be published by film manufacturers and, if so, in what form, depends on many considerations. In view of the vicissitudes that the image in the photographic negative undergoes in printing and viewing before it gives rise to a perception in the visual cortex of the observer, no such values by themselves can predict the behavior of photographic films; they can only indicate the potentialities that the respective films offer to the user. In this respect, they resemble values of graininess and resolving power.

Photographers make sure that light and shade are pleasingly reproduced and that graininess is not objectionable as a matter of course. The resolving power of lenses and sensitive materials is usually adequate, except under extreme conditions of enlargement. Sharpness is thus often left as the major determinant in photographic definition, and unfortunately this is affected significantly by variations in almost every factor of the photographic process. If we reconsider the title of this article "How sharp is a photograph?", the answer is that acutance as evaluated by the method described herein has been found to be an excellent guide.

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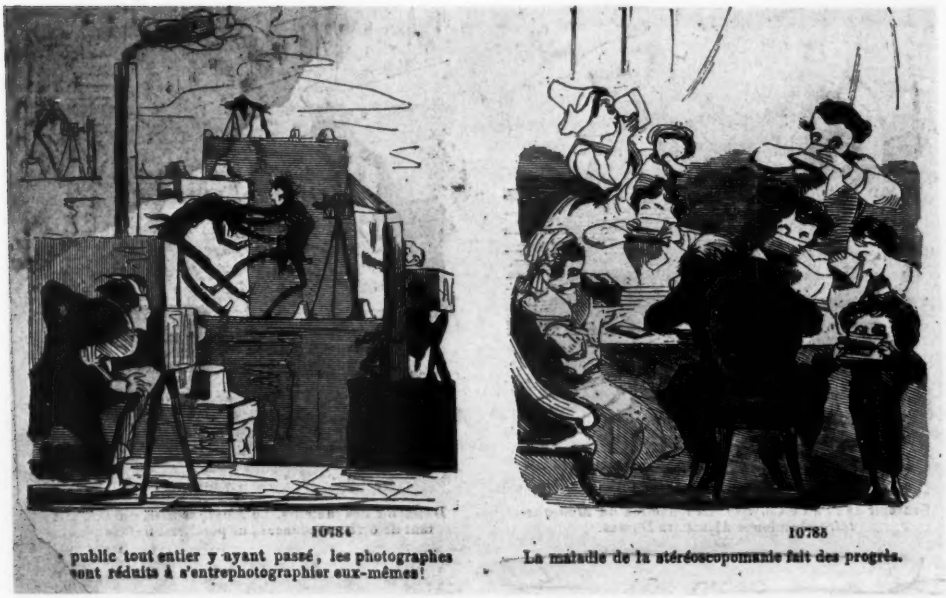
2. Phil. Mag. **47,** 192 (1874); *Scientific Papers* (University Press, Cambridge, 1899), Vol. 1, p. 215.
3. Astrophys. J. **3,** 169 (1896).
4. Image **3,** 34 (May, 1954).
5. J. Soc. Mot. Pict. TV Engnrs. **58,** 277 (1952); PSA Jour. (Phot. Sci. Tech.) **198,** 55 (1953).


10784
public tout entier y ayant passé, les photographes sont réduits à s'entrephotographier eux-mêmes!
10785
La maladie de la stéréoscopomanie fait des progrès.

Cartoons: Photographers reduced to photographing one another and the stereograph mania.

Reminiscences of an Early Motion Picture Operator

by Francis Doublier

The following is a text of the lecture given by Doublier on October 15, 1941 at the School of Education Auditorium of New York University.

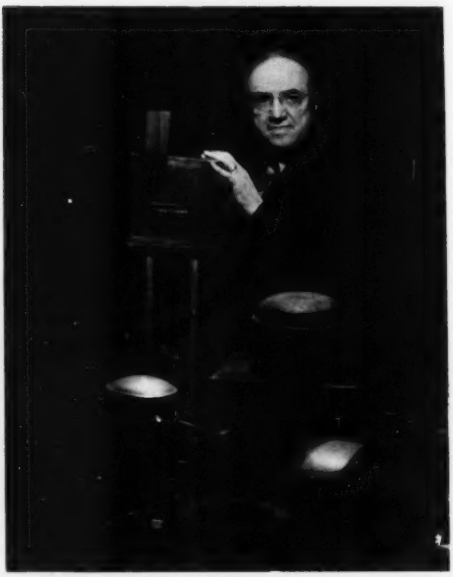
I WAS BORN AT LYONS, FRANCE, in 1878. A cripple at birth, my father wished to train me for an occupation where it would not be necessary to walk about. When I was 12, my father was killed in an accident. After his death, M. Lumière came to my mother and told her that all of us—we were a family of several boys—would find employment in his factory, so at sixteen I went to work for Lumière.

Auguste and Louis Lumière at this time were experimenting on motion pictures like many others and one day, in the summer of 1894, they saw a piece of film from Edison's Kinetoscope. This peep show could be seen by one person at a time. Louis Lumière worked out the famous "triangular cam" and the famous Cinematographe, combination of camera, printer and projector was born. The earliest motion pictures ever taken for the screen were some Lumière himself took of workers pouring out of his factory. I myself am in these pictures, riding a bicycle and wearing a straw hat.

On March 22, 1895, we showed both the camera and pictures we had taken at the Societe de l'Encouragement. The pictures created a great sensation. People were astonished and even panic-striken to see a locomotive charging toward them. They were amazed at the motion in the pictures. They would say "See, the leaves on the tree move!" "Smoke comes out of the chimney!" When a picture of the charge of French Cuirrassiers was flashed on the screen, people almost fell into a panic, for they believed the soldiers were charging at them.

I was sent to Madrid in 1895 by M. Lumière to take pictures of a bullfight. M. Lumière gave me his camera, and cautioned: "Do not let this camera out of your sight, Francis." So I carried it around with me every place I went, and even put it under my pillow when I slept. I went from Madrid to Paris, Brussels, Amsterdam, and on May 28, 1896 I was in Moscow to film the coronation of the Czar. It was the custom that the Czar and Czarina go to a large field just outside of Moscow three days after their coronation to perform some kind of ritual, so I, wishing to film the incident, appeared at the field early on the day of the projected visit and set up my camera on some planks. I went down with the crowd to get some souvenirs made for the occasion – a goblet, and a scarf, with pictures of the Czar

Portrait of Francis Doublier



"Pillow Fight," a still from a movie probably photographed by Doublier. 1897.

and Czarina on them – when a terrible panic was started. Out of a crowd of 20,000, some 6,000 people were killed. I myself was trampled on and caught in the mob, but escaped without injury.

I traveled all over Russia. At one city I witnessed a pogrom. At another, the police destroyed a film I had made of the Prince Napoleon, a member of the Russian royal family, because he had been photographed dancing with the lady of his affections, a professional dancer, and because no picture of a member of the royal family could be shown on a screen without special permission from the authorities.

At this time I was using a film which took just one minute per reel. I hit upon the idea of telling people to come to see the pictures I took because they themselves would be in them. Sometimes I ground the crank for two hours, pretending to take people's pictures, but would actually take only about 60 feet of film.

The Dreyfus affair was still a source of great interest in those days, and out of it I worked up a little film-story which made me quite a bit of money. Piecing together a shot of some soldiers, one of a battleship, one of the Palais de Justice, and one of a tall gray-haired man, I called it "L'affaire Dreyfus." People actually believed that this was a filming of the famous case, but one time after a showing a little old man came backstage and inquired of me whether it was an authentic filming of the case. I assured him that it was. The little old man then pointed out that the case had taken place in 1894, just one year before cameras were available. I then confessed my deception, and told him I had shown the pictures because business had been poor and we needed the money. Suffice to say, I never showed "L'affaire Dreyfus" again.

I began to travel, going to Turkey, Egypt, India, Indo-China, and Java. I took pictures and exhibited them in all of these countries.

In 1900 I went back to France to film the French Exposition. In 1902 I came to America to open a plant in Burlington, Vt. . . .

From there I went to Fort Lee, New Jersey, where I have remained to this day. I have been in the motion picture business for over 45 years.

Finally, I would like to make just one point: Le Prince, Friese-Greene and others came before Edison: they did the groundwork – Edison added a few innovations. And it was Lumière, not Edison, who made the first practical and commercial motion picture on the screen.

Fifth Anniversary

THE DRYDEN THEATRE FILM SOCIETY

by James Card

THE DRYDEN THEATRE Film Society, in many ways the world's most unique motion picture study group, has just celebrated its fifth anniversary. From its start in 1951, the Film Society which meets in the special theatre of the George Eastman House, has had the advantage of programs made up from the vast film collection at Eastman House: a collection which may not be circulated and can only be studied at Eastman House.

The Rochester film enthusiasts who join the Dryden Theatre Film Society, participate in twenty programs each season which runs from September to June. Programs are held in the evening and each of the presentations is repeated five times.

The film programs are conducted on a lecture basis; each season the films to be shown are selected to develop a specific theme in the historic development of the cinema. All programs are arranged by the Curator of Motion Pictures and each film shown is preceded by a lecture which brings to the audience the background of the film, the artists who made it and its special significance within the general theme of the series to which it belongs.

The first Dryden Series in 1951 was devoted to "The Transition From Silence to Sound" and began with Jean Renoir's *Nana*. *Nana* was made by the great painter's son in 1925; it represented a skillful attempt to recapture in motion, the visual atmosphere of the period which Renoir's father had painted so memorably. This film, with its nostalgia for an era revealed chiefly on canvas, possessed double emphasis on its silent eloquence and twofold interest in that an eminent film maker sought to interpret through a new medium, the identical milieu his father had captured through his paintbrush.

Next on this first series was the milestone in the advent of sound films: Warner Brothers' production of *Don Juan* with John Barrymore. The first feature film to be shown with its own synchronized musical score, *Don Juan* was preceded by a series of Vitaphone shorts, September 1926. The shorts included performances by Martinelli, Anna Case and the dancing Cansinos. Among the latter was the young dancer who later, as Rita Hayworth became a most familiar figure in the medium just being launched on that September evening. Excerpts from the original Vitaphone shorts were also shown along with *Don Juan* in the Dryden Theatre revival of this historic occasion, just a quarter a century after the event.

The next two programs on the first series, were examples of silent film making at the very peak of its visual adeptness in doing very well without dialogue or even sound. Both Pommer's *Barbed Wire* (with Pola Negri and Clive Brook) and Von Sternberg's *Docks of New York* were able to tell their intimate stories to spectators so glibly without words that even present-day audiences found nothing strange in their muteness. And both films were examples of excellent productions almost lost and forgotten in the excitement the film public was experiencing over the advent of part-talking pictures through 1928 and 1929.

As an example of one of the last silent pictures to win international recognition in face of the increasing competition of dialogue films in 1929, the memorable mountain film of G. W. Pabst and Dr. Arnold Fanck, *The White Hell of Pitz Palu* was restored to the screen with its original musical score. Starring Gustav Diesel and Leni Reifenstahl, this widely admired film was recently remade to star Hans Albers and released in the United States with voices dubbed in English. The wholly inartistic process of dubbing in false voices, so prevalent currently is surely one of the most unfortunate aspects of the coming of sound to motion pictures. Seeing the splendid silent, foreign made production *The White Hell of Pitz Palu* reminded Dryden Society members of how great a loss it was to the international exchange of films when they began to speak with all the tongues of Babel. The next film shown was a demonstration of the early difficulties with international casts in dialogue films. The picture, a German-French production of 1931 was called originally, *Berge in Flammen*. In this country it was re-titled, *The*

Doomed Battalion. In the original version, the cast included Luis Trenker, Lissy Arna and Luigi Serventini with dialogue in German and Italian. In the English language version, Trenker was retained, but Miss Arna was replaced by Tala Birell and Serventini by Victor Varconi, both of whom could speak English along with Trenker. Wherever possible, supporting roles were re-filmed with such English speaking actors as Gibson Gowland, Gustav von Seyffertitz and Henry Armetta. In some cases English voices were just dubbed in much as they are today. Thus this film with its scrambled cast and variegated voices and accents served to dramatize the chaotic state the international film was plunged in by the sound track.

The credit side of the transition was illustrated by the 1932 film version of *Rain* with Joan Crawford and Walter Huston proving that a combination of theatrical and cinema technique was not necessarily a complete fiasco in a motion picture.

The series was ended with the first internationally popular musical: Jan Kiepura's *Be Mine Tonight,* an acknowledgment that for light and gay entertainment, the coming of sound and music had at least potentially qualities which if they did not totally offset the artistic difficulties, provided at least enough enjoyment to assure the popular triumph of the sound film over the lamented silent cinema.

Since that first series in 1951, the Dryden Theatre Film Society, always increasing its membership each season, has completed seven other groups of film lectures. Talk of the World was the second series: a round-up of international dialogue films from France, Denmark, Japan, Germany, Great Britain and China. On this series the Japanese film *Kimiko,* and the all-Eskimo production *The Wedding of Palo* enjoyed the most comment of members. Other much discussed programs were Guitry's *Pearls of the Crown,* John Barrymore in *Counselor at Law* and Rene Clair's *Sous les Toits de Paris* and the astounding British ghost film *Dead of Night.*

The third series was concerned exclusively with silent films. The Silent Drama included showings of *Ben Hur, The Birth of a Nation, Faust, Variete* and Dreyer's masterpiece, *The Passion of Jeanne d'Arc.* A special portion of this series bracketed the "Era of Gin, Jazz and Gasoline" with the showing of Gloria Swanson's

Luis Trenker (left) in ***The Doomed Battalion,*** 1931

Manhandled. Joan Crawford's first big hit, *Our Dancing Daughters* and Clara Bow "in and with *It.*"

Subsequent series have been called: Exotic Cinema, The Silent Stars, Masters and Masterpieces of the Cinema, The Art of Entertainment, Film and Theatre. These programs have restored to view many of the most ambitious and successful films of the past like *Grand Hotel, The Big Parade, The Thief of Bagdad, Romeo and Juliet, The Good Earth, Mutiny on the Bounty, The Last Laugh, Bicycle Thieves, Captains Courageous, Casablanca, La Grande Illusion, Carnival in Flanders.* Almost the whole career of certain stars has passed in review; Garbo's for example. Society members saw her first film: *Gosta Berling's Saga,* her first American picture, *The Torrent, Love, Grand Hotel, As You Desire Me* and her greatest sound film, *Camille.*

This season, the Ninth Dryden Series will deal with the problem of adapting great novels to the motion picture medium. From Prose to Screen will consider the film versions of such great authors' work as Dostoievsky, Tolstoi, Cooper, Hugo, Lagerloef, Anatole France, Stevenson the Brontes and Dickens. Once again members of the Dryden Theatre Films Society will have the rare opportunity of studying films chosen from the George Eastman House collection which since the first program five years ago, has added over two thousand motion pictures to its vaults.

William Michael Rossetti,
by Julia Margaret Cameron, about 1875.

According to astute critics and passionate lovers of art it is the afterglow that remains in the mind of the witness that determines the ultimate value of a work of art. They look to what is remembered after the work is out of sight for the soundest measure of its ultimate value. Connoisseur and lover of art Bernard Berenson identifies this residue; it is a sense of ennoblement. If the spectator is enriched, if he is, so to speak, a "better" person for having seen the pictures, heard the music, or read the poem, that work is superior.

Ennoblement of the spectator as a basis of evaluation has not been exactly common in photographic criticism and still is not. It is so uncommon that if a critic were to apply such a yardstick the results could only be controversial – fortunately. The William Rossetti portrait is presented as an example of a photograph that ennobles the witness.

It was taken in the 1870's by Julia Margaret Cameron, who learned photography when she was fifty, and made her fame photographing many of the great men of letters and science who were her friends in England. William Rossetti is the brother of the famous poet and painter Dante Gabriel Rossetti. Paradoxically where the Pre-Raphaelites sought ennoblement of the reader and witness with their art, Mrs. Cameron found ennoblement for us in her portraits of them. As Clive Bell says of her, "she was an artist."

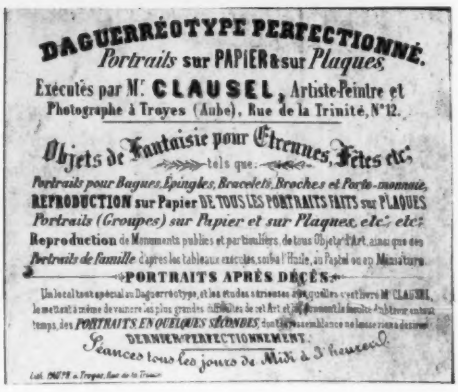
DAGUERREOTYPES

The George Eastman House collection of daguerreotypes is extensive, numbering well over a thousand pieces. The majority of these daguerreotypes are portraits, taken mostly in America during the 1850s, when the daguerreotype medium was at its height. Only a relatively small number of them have any particular significance, because the sitters are not identified, and the names of the photographers who took them are not known. We have chosen for description in this Index of Resources, only those daguerreotypes which are of unusual quality, and, so far as possible, documented.

Of daguerreotypes made in the earliest period, following Daguerre's specifications exactly, and using the apparatus which he designed, the oldest is the View of Toulouse *taken on February 27, 1840, by Barthélemy-Urbain Bianchi (reproduced on p. 116). Next in age are a group of 12 daguerreotypes taken by Samuel Bemis with the camera and outfit now in the George Eastman House collection (see p. 115).*

KING'S CHAPEL, BOSTON. Daguerreotype, 16.5 x 22 cm. Pasted on the back is the label: "Boston, April 19, 1840. S. A. Bemis's *first* daguerréotype experiment. Iodizing process 25 mts (apparatus new). Camera process 40 mts.—Wind N. W. Sky clear, air dry and very cold for the season. Lens meniscus. Daguerr's [sic] apparatus. Time 4.50 to 5.30 P.M.; N. Y. Plate, ordinary." (Neg. 2850)

CRAWFORD NOTCH. Daguerreotype, 16.5 x 22 cm. Taken by S. A. Bemis, about 1840. The white outline around the mountain is due to reversal by solarisation a common phenomenon in daguerreotypes. (Neg. 2084)


DAGUERRÉOTYPE PERFECTIONNÉ.
Portraits sur PAPIER & sur Plaques,
Exécutés par Mr CLAUSEL, Artiste-Peintre et
Photographe à Troyes (Aube), Rue de la Trinité, N°12.
Objets de Fantaisie pour Étrennes, Fêtes etc.
tels que:
Portraits pour Bagues, Épingles, Bracelets, Broches et Porte-monnaie,
REPRODUCTION sur Papier DE TOUS LES PORTRAITS FAITS sur PLAQUES
Portraits (Groupes) sur Papier et sur Plaques, etc, etc.
Reproduction de Monuments publics et particuliers, de tous Objets d'Art, ainsi que des
Portraits de famille d'après les tableaux exécutés, soit à l'huile, au Pastel ou en Miniature.
PORTRAITS APRÈS DÉCÈS.
DERNIER PERFECTIONNEMENT.
Séances tous les jours de Midi à 3 heures.

LANDSCAPE. Daguerreotype, 10.3 x 14.5 cm. Taken by Clausel, of Troyes, France, according to label pasted on the back (reproduced below). About 1850. Like most French daguerreotypes, the picture is protected by glass on which is painted a border of gold and black. Cromer collection. (Neg. 2807)

VIEW OF THE PLACE DE LA CONCORDE, PARIS. Daguerreotype, 7 x 9.5 cm. Maker not known. About 1850. On the skyline: the windmills of Montmarte. Like most early daguerreotypes, the image is reversed. Cromer coll. (Neg. 2806)

CONSTANTINE, ALGERIA. Daguerreotype, 7.5 x 10.2 cm. Scratched on plate, lower left corner: Delemotte et Alary. Probably 1850. Cromer coll. (Neg. 2810)

RUINS OF A MARABOUT IN THE OASIS OF BISKRA. Daguerreotype, 7.2 x 9.5 cm. Signed, both on plate and on back, Delemotte. Cromer coll.

MÉDÉA, ALGERIA. Daguerreotype, 7.3 x 9.7 cm. Scratched on plate, lower left corner: Delemotte et Alary. Probably 1850. Cromer coll. (Neg. 2809)

ENTRANCE TO THE HOTEL DELESSERT, RUE D'UZES, PARIS, demolished in 1853. Daguerreotype, 20.5 x 15 cm. Maker not known. Cromer coll. (Neg. 2811)

THE GERMAN PHOTOGRAPHIC ANNUAL 1956, edited and published by Dr. Wolf Strache, Stuttgart, Germany. U. S. distributors, American Photographic Book Publishing Co., New York. 8 color plates, 120 black & white illusts. $7.50.

This is the third issue since *Das Deutsche Lichtbild* resumed publication after a fifteen year lapse, and it asserts its former supremacy among annuals. Its superior printing quality makes itself felt at first glance – on this score only the English annual *Photography Year Book* matches. It is as contemporary as its American counterparts. News, amateur, experimental, commercial and professional is sprinkled with fashion photography of the kind that usually reaches the popular annuals, and it lacks about the same amount of flare. Unlike the others which have gone international it publishes only German photographers. Some handsome photographs are to be found in it: *Between the Lines* by Robert Häusser, a night club scene *In Paris* by Carl Abel appeal to this reviewer; a cross-eyed Siamese cat watching two ping pong balls in the air at once, by Helmut Rudolph, is utterly hilarious.

Of the six essays (translated) by people connected with the German photographic world the one by Fritz Gruber (an official of *"photokina,"* a trade fair of huge dimensions) on *The Coming Generation* proves the most informative because it gives a very frank appraisal of the situation of photography in Germany during the past twenty years. It is his thesis that the young photographers who have taken up the medium since 1947, because of the Hitler hiatus, never knew the traditions that had been established earlier in Germany by such pioneers as Dr. Paul Wolf, Albert Renger-Patzch and Dr. Erich Salomon. They also turned away from the evil of photography under Hitler. Hence they started out fresh. When one looks thru the *German Photographic Annual 1956*, a change from the issues of twenty years ago is obvious, but one only finds exactly what is being done in England, France, Switzerland or America today.

Knowing the power and influence of Moholy – Nagy and the other Masters of the Bauhaus, who fled Germany in 1933, it is curious that Mr. Gruber should make no mention of this influence nor consider it a part of the pre-Hitler tradition. (Many of the photographs show the influence.) Still more curious he does not mention the new and potent *fotoform* group that is very active under the guidance of Dr. Otto Steinert at Saarbrucken, which group does acknowledge its roots in the Bauhaus and its stem in the present.

There is a fine biographical section, accompanied with notes about the pictures, that gives considerable insight into the life and tenor of this period. It is surprising how many of the photographers were prisoners of war, and how many have been trained in one or more of at least a half dozen schools of photography, that have been reestablished.

M. W.

HITLER WAS MY FRIEND by Heinrich Hoffmann. London, Burke, 1955. 256 p. Translated by Lt. Col. R. H. Stevens.

Adolf Hitler's personal photographer during his entire political career was Heinrich Hoffmann. His autobiography, like those of other Nazi party members who changed their minds after 1945, is an elaborate apologium. Hoffmann claims that he was an artist rather than a politician and is therefore guiltless. But his thousands of photographs were sharp-biting propaganda tolls for the building up of Hitler to the god-like figure so necessary to his short-lived success. It is inconceivable that Hoffmann was unaware of the major part he was playing in the nefarious machinery of the creation of a dictator. His activity was by no means confined to taking news photographs of the activities of the Führer. His camera was a research tool. Sequence pictures, for example, taken during the rehearsal of a speech helped Hitler to judge the effectiveness of his gestures. Photographs were made of Hitler modelling the latest creations of his tailor, to determine how the clothes looked on him, and if they were in character. Among the most interesting photographs are some that were censored. Photographs of Hitler wearing glasses were never released, and a snapshot of him using a magnifying glass to study a map was promptly discarded.

Hoffmann attempted to photograph Hitler in the days before the Putzsch. An American editor offered $100 for a picture of the head of the new Nazi party. In an attempt to catch Hitler unawares, as he was climbing into his automobile, Hoffmann set up his camera – a bulky tripod affair – on the sidewalk. After a long wait,

Hitler finally crossed in front of the lens, but just as Hoffmann snapped the shutter two strong men pinioned him. The offending camera was kicked over, the plate holder opened, and the glass plate smashed. Hoffmann tried again, at a wedding party and was successful. Hitler – unaware that he had been photographed – apologized to Hoffmann and explained that photographs now would be dangerous, but that the time would come when he would need lots taken and that Hoffmann would be the only man to do the job. Hoffmann then produced the sneaked negative and, to the Führer's astonishment, destroyed it.

As an apology, the book is not only unsatisfactory, but entirely unwarranted. Its sole value is the evidence it contains that photography is a powerful tool which can be used for evil as effectively as for good.

COBURN: HENRY JAMES'S PHOTOGRAPHER by Joseph J. Firebaugh. *American Quarterly* VII (1955), 215-133.

In this rare instance when a scholar has approached the life and work of a photographer how refreshing is the atmosphere of sanity, considered judgment and obvious affection for his subjects that permeates this whole essay.

Alvin Langon Coburn is now a quiet figure in the history of photography; he is also articulate and Firebaugh has made ample and telling use of what Coburn has to say about photography, about his pursuit and experiences with men of letters and art in England and about his association with Henry James in particular. A brief biography is given: Coburn, born in Boston, was taught photography by his cousin F. Holland Day about 1891 when Coburn was eight or nine years old, he had an early success, worked with Alfred Stieglitz of New York, took a significant part in the famous 1910 Photo-Secessionist show at Buffalo, he eventually settled in England and for years lived in London. His great interest in the famous men of the first decade of the 20th Century was published as *Men of Mark* in 1913, and a second one, *More Men of Mark* about 1922.

This brief biography is expanded with Coburn's ideas on craftsmanship and photography as an art as he expounded his ideas on these subjects over the years. Firebaugh feels that the attraction and friendship of James and Coburn was due in part to a similarity of respect for craftsmanship and an interest in the sources of creative genius. James solved the latter problem pragmatically, Coburn idealistically and "they both had a virtually religious dedication to art; and, although the 'world of the unseen' interested them both, they were both absorbed in the vitality and visual beauty to be discovered in the world around them. These elements shared, would be enough to explain their collaboration and their friendship; but perhaps the unquestioned personal charm and the love of elegance which both men possessed – perhaps these explain even more their collaboration and their association."

Not the least fascinating part of the essay is the section dealing with how both men, feeling that photography should not tell a story or in any way be literary, yet worked together to illustrate the New York Edition of James's oeuvre. There is a delightful tale of the young man and the old man searching for a shop to illustrate the first volumn of *The Golden Bowl*. The shop that James's had in mind was an essence of such establishments. But they found one, "which the camera by a miracle of chance and the bounty of London was able to record."

In a way Firebaugh's essay is a text for what would be, if a hundred or more of Coburn's photographs were reproduced, a splendid monograph. A monograph that would approach the stature of the Heinrich Schwartz book on Hill and Adamson.

AVAILABLE LIGHT

A realistic photograph of the corner of a room, with a bureau and a kodak in flames, comes to us from Mr. K. E. Blair, Canandaigua, N. Y. Mr. Blair, after reading THE PHOTO-MINIATURE No. 31: *Photographing at Night*, attempted to photograph his bureau by candlelight, using two candles for the purpose. After beginning the exposure he left the room for dinner and returned to find the bureau in flames. The photograph makes an interesting souvenir of the experiment.

From **Photo-Miniature** #42, 1902

George Eastman Room

The former dining room is used to house a pictorial and documentary history of the life of George Eastman. The central glasses case holds the #1 Kodak which was made public in 1888. The foreground case illustrates the philanthropies to which Mr. Eastman devoted his fortune in the later part of his life.

FRONT COVER ILLUSTRATION

This daguerreotype of Andrew Jackson, seventh president of the United States, was presumably taken at his home, The Hermitage, about 1845. The photographer is unknown but may well have been the same one of Brady's team who made a similar daguerreotype from which an India Ink copy was made and published. The cover illustration has never before been published.

The original is a gift of A. Conger Goodyear to the George Eastman House.